

CIRCUITMEDIC

First-Aid Kits for Circuit Boards®



Supporting electronics manufacturing companies around the world with first-aid kits, tools, materials and guides for circuit board rework and repair for over 35 years.

www.circuitmedic.com

Circuit board repair is a challenge...

When the inevitable first-aid is needed for your rework project, provide your technicians with time-tested tools and materials designed and built to get the job done quickly and reliably. These unique tools and materials are precisely what is needed to achieve successful results and are used throughout the commercial, medical and military electronics industries.



CircuitMedic is a division of
Circuit Technology Center, the country's
most innovative specialists in circuit
board rework and repair.

Circuit Technology Center

Surgeon grade rework and repair, by the book and guaranteed.®

www.circuitrework.com

CircuitMedic Repair and Rework Guides



CircuitMedic kits have been specifically designed to meet the requirements outlined in IPC repair and rework specifications, and include in-depth instructions that follow these same standards.

View our guidebook that follows IPC 7711/7721 Standards and provides step by step procedures including illustrations and video for the variety of rework/repair challenges you may face when working on modern, high density circuit boards at: www.circuitrework.com

The information within these guides should be helpful to anyone who works with bare circuit boards and circuit board assemblies. These guides are packed with illustrations and videos and follow popular IPC standards.

These guides will help you through the maze of challenges you face when working on modern, high density circuit boards. If your company complies with ISO-9000 or any demanding quality standard, you can refer to these guides as your on-line reference.

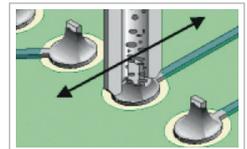
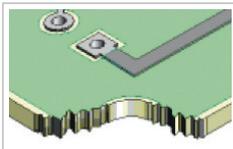
Guides in sections 1 through 6 detail the proper step-by-step techniques, tools and materials, and cautions needed to reliably repair and modify bare and assembled circuit boards.

Guides in sections 7 through 9 detail the proper step-by-step techniques, tools and materials, and cautions needed to reliably rework assembled circuit boards covering soldering, desoldering and BGA rework procedures.

Each procedure includes a "Conformance Level" indicated as high, medium or low. This Conformance Level indicates how closely the repaired or reworked product will be to the original specifications. The Conformance Level listed for each procedure should be used as a guide only.

Each procedure also includes a "Skill Level" providing a gauge for the requisite experience and skill needed by the operator to obtain a reliable outcome.

Hundreds of detailed illustrations are included throughout this guidebook.



Professional Repair Kit

P/N 201-2100 120 VAC

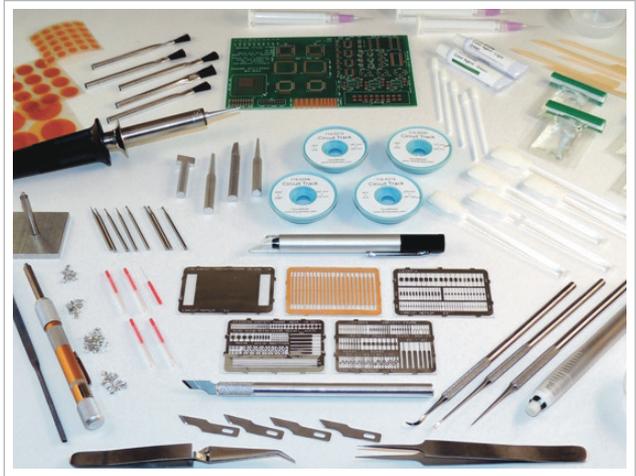
P/N 201-2102 230 VAC

APPLICATIONS

- Surface Mount Pad Repair
- Land Repair
- Circuit Track Repair
- Plated Hole Repair
- Base Board Repair

FEATURES

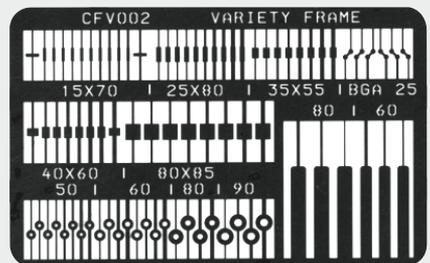
- Has everything you need to repair most types of circuit board damage.
- Includes dry film, epoxy-backed replacement circuits that do not use messy liquid epoxy.
- Includes eyelets and setting tools for plated through hole repair.
- Includes Circuit Tracks to repair damaged circuits.
- Includes epoxy and color agents for solder mask or base board repair.
- All the tools and materials are neatly arranged in a conductive, ESD safe carrying case.



Kit is shipped in a rugged, conductive plastic case safe for ESD sensitive areas.

- Tools and materials conform to IPC guidelines.
- Every item is prime quality, time-tested, to meet high standards.

CFV002





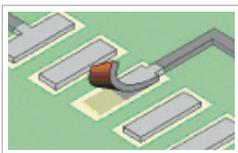
DESCRIPTION

The Professional Repair Kit is the most complete and most versatile circuit board repair kit you'll find anywhere. It's the total package.

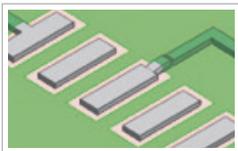
The kit includes dry film, epoxy-backed circuit frames, and unique replacement circuits that do not use messy liquid epoxy. Includes eyelets and setting tools for plated through hole repair, Circuit Tracks to repair damaged circuits, epoxy and color agents for solder mask or base board repair all packaged in a convenient carrying case.

If you need to repair damaged circuit boards, the all-in-one Professional Kit is what you need.

BEFORE

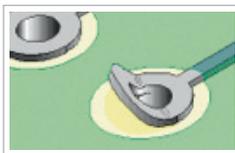


AFTER

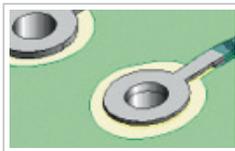


Includes replacement surface mount and BGA pads.

BEFORE



AFTER



Includes eyelets and conductors for plated hole and circuitry repair.

BEFORE

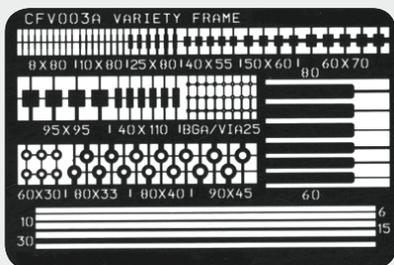


AFTER



Includes replacement laminate and high strength epoxy for base board repair.

CFV003



Master Repair Kit

P/N 201-2400 120 VAC

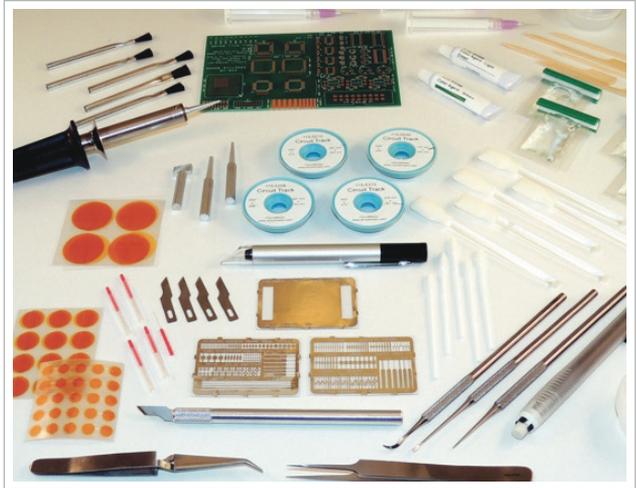
P/N 201-2402 230 VAC

APPLICATIONS

- Surface Mount Pad Repair
- Land Repair
- Circuit Track Repair
- Base Board Repair

FEATURES

- Includes dry film, epoxy-backed replacement circuits that do not use messy liquid epoxy.
- Includes Circuit Tracks to repair damaged circuits.
- Includes epoxy and color agents for solder mask or base board repair.
- All the tools and materials are neatly arranged in a conductive, ESD safe carrying case.



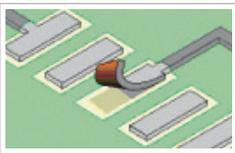
Kit is shipped in a rugged, conductive plastic case safe for ESD sensitive areas.

- Tools and materials conform to IPC guidelines.
- Every item is prime quality, time-tested, to meet high standards.
- Does not include eyelets and setting tools for plated through hole repair.

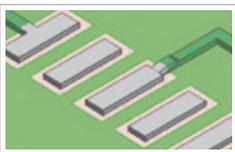
DESCRIPTION

The Master Repair Kit includes dry film, epoxy-backed circuit frames for repair of lands and surface mount pads. The kit also includes Circuit Tracks for repair of damaged conductors, epoxy and color agents for solder mask or base board repair all packaged in a convenient carrying case.

BEFORE

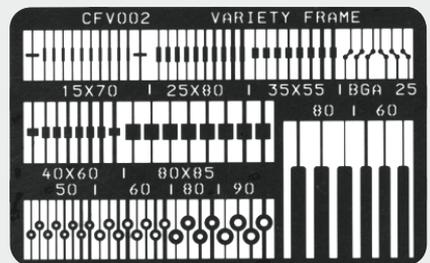


AFTER



Includes replacement surface mount and BGA pads.

CFV002



Land/Pad Repair Kit

P/N 201-1400 120 VAC

P/N 201-1402 230 VAC



APPLICATIONS

- Surface Mount Pad Repair
- Land Repair

FEATURES

- Includes dry film, epoxy -backed replacement circuits that do not use messy liquid epoxy.
- Includes epoxy for solder mask or base board repair.
- All the tools and materials are neatly arranged in a conductive, ESD safe carrying case.
- Tools and materials conform to IPC guidelines.
- Every item is prime quality, time-tested, to meet high standards.



Kit is shipped in a rugged, conductive plastic case safe for ESD sensitive areas.

DESCRIPTION

This kit includes the tools and materials needed to reliably replace damaged lands, surface mount and BGA pads. The unique Circuit Frames used to replace these conductor patterns are made from rolled, annealed copper electroplated with tin.

Each Circuit Frame has a dry film adhesive backing. You simply select the appropriate size pad or land, trim it from the Circuit Frame and bond it to the circuit board surface. Included with the kit are a bonding iron and tips to match the various sizes of the lands and pads.

A multifunctional epoxy is included for over coating the lap solder joint formed between the replacement pad and connecting circuitry.

This kit is specifically designed to make the repair process as simple and reliable as possible. All the tools and materials are packaged in a rugged ESD safe carrying case.

Gold Contact Repair Kit

P/N 201-1120 120 VAC

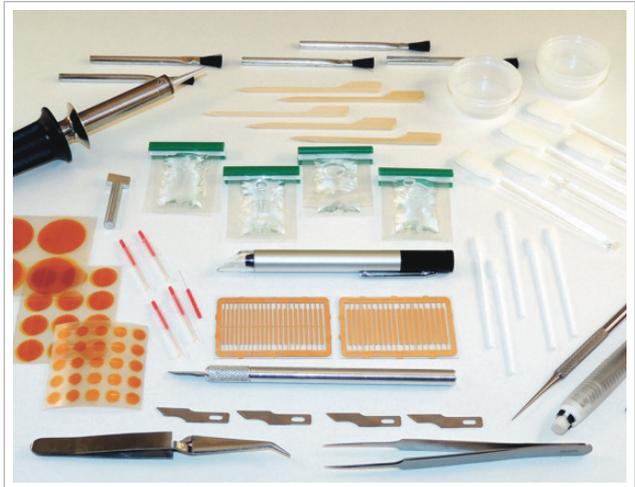
P/N 201-1122 230 VAC

APPLICATIONS

- Gold Edge Contact Repair

FEATURES

- Conforms to IPC guidelines.
- Dry film epoxy backing on Circuit Frames eliminates messy epoxies.
- Replacement contacts are supplied with nickel and gold plating.
- Kit contains everything needed for gold edge contact repairs.
- All the tools and materials are neatly arranged in a conductive, ESD safe carrying case.

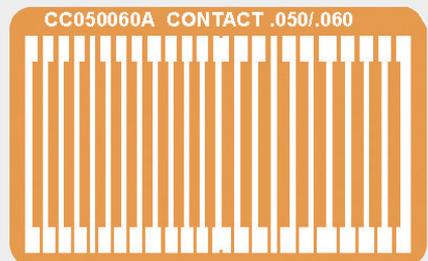


Kit is shipped in a rugged, conductive plastic case safe for ESD sensitive areas.

DESCRIPTION

Repairing gold edge contacts on circuit boards is delicate work, but this kit helps make the process easier and more reliable. Simply select the correct size and shape of gold plated contact from the Circuit Frames included in the kit and bond it in place. These unique replacement circuits have a dry film, adhesive backing that is activated and cured with heat and pressure. This IPC recommended repair method restores your boards to their original level of performance and reliability.

Note: When gold edge contacts become contaminated with solder, consider using the Gold Contact Plating Kit described on page 13.



Circuit Bonding System

P/N 115-4100 120 VAC

P/N 115-4102 230 VAC



APPLICATIONS

- Surface Mount Pad Repair
- Land Repair
- Gold Edge Contact Repair

FEATURES

- Precision design for bonding of extremely small pads.
- Heavy duty construction provides a stable platform.
- Calibration gauge maintains regulated bonding force.
- Temperature controller maintains uniform temperature.
- Includes 4 bonding tips.
- Includes 3 circuit frames



The Circuit Bonding System is ideal for replacing small surface mount and BGA pads.

DESCRIPTION

Repair technicians appreciate the accuracy of this calibrated Bonding Press, especially when repairing surface mount and BGA pads. The press not only gives the operator better control over the bonding process, but also ensures optimal adhesion and repeatability. The Rework Stand has a built-in calibration slide to maintain a regulated bonding force depending upon the circuit pattern size and shape. A digital temperature controller maintains a uniform temperature throughout the 30-second bonding cycle.

SPECIFICATIONS

Frame Construction: Heavy gauge aluminum and steel.

Throat Depth: 260 mm.

Throat Height: 100 mm.

Vertical Travel: 100 mm.

Weight: 10 lb. (4.5 kg.).

Power Input: 120 or 230 VAC.

Temperature Controller Range: 200 °C to 480 °C.

Resolution: 1°C Power.

Consumption: 45 Watts.

Output Voltage: 24 VAC.

Heat Up Time: 5 minutes.

Bonding System includes one each of the following Bonding Tips.

P/N 115-2306 Bonding Tip, .040" x .060"

P/N 115-2316 Bonding Tip, .080" x .120"

P/N 115-2206 Bonding Tip, .120" Diameter

P/N 115-2204 Bonding Tip, .080" Diameter

Additional tips may be purchased by visiting <http://www.circuitmedic.com>

Circuit Frames

Visit our website for a complete selection of Circuit Frames:
www.circuitmedic.com/products/circuitframes.html

DESCRIPTION

Imagine replacing damaged circuits without the mess of liquid epoxy, with a bond strength equal to the original, on bare or loaded circuit boards -- all in about 30 seconds. Our replacement Circuit Frames with dry-film adhesive backing make this delicate, precise procedure quick and neat. Trim out the circuit you need and bond it to the circuit board surface with a bonding iron or bonding press.

Choose from hundreds of different shapes, plated in bright tin, tin lead, or nickel gold, or let us custom design and fabricate that special shape for you.

SPECIFICATIONS

Overall Size: 2.25" x 1.50" (57 x 38 mm).

Base Material: Rolled annealed copper foil .0014" (.036 mm) thick.

Adhesive Backing: B-staged modified acrylic film adhesive .002" (.051mm) thick.

Bonding Temperature: 475°F +/- 25°F (246°C +/- 14°C).

Bonding Time: 30 seconds.

Peel Strength: Minimum 8 lbs/inch (1.43 kg/cm) after cure to FR-4 material.

Shelf Life: 1 year minimum. Each Circuit Frame is stamped with the expiration date.

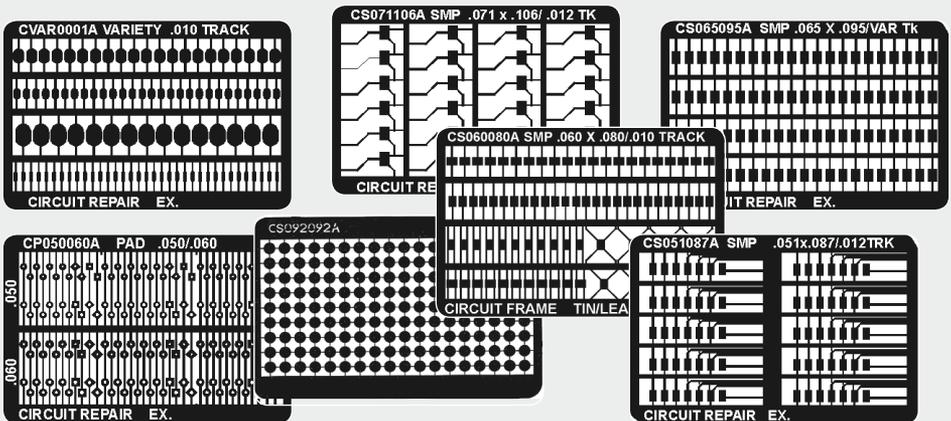
PLATING OPTIONS

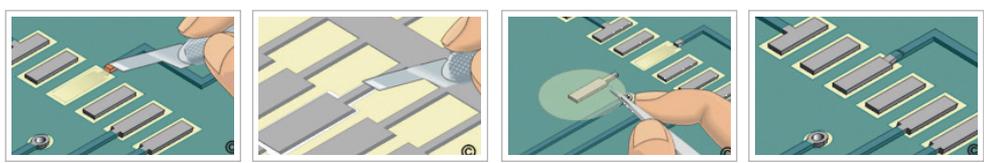
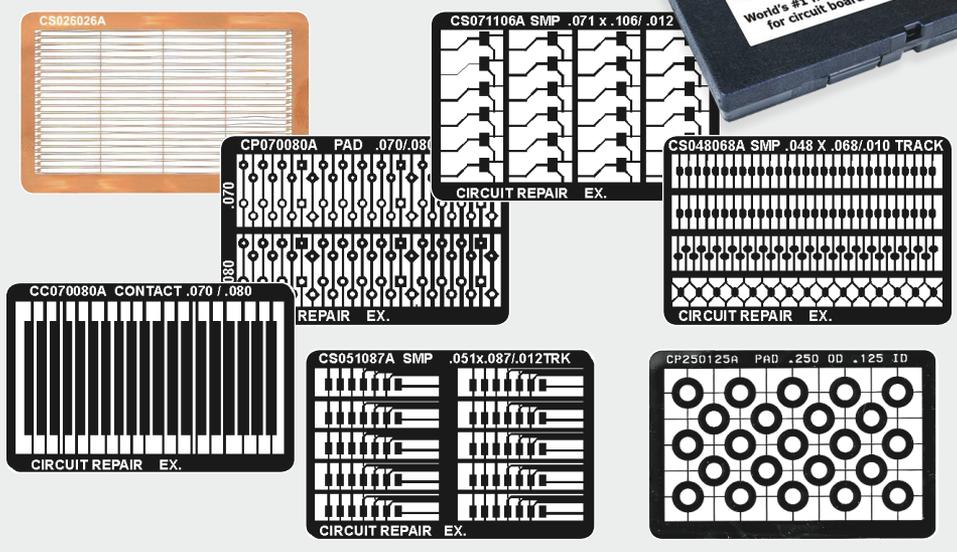
Bright Tin: .0001" (.0025 mm) Bright Tin (Lead Free).

Nickel/Gold: .000050" (.00127 mm) Gold over .000100" (.00254 mm) Nickel.

Tin/Lead: .0001" (.0025 mm) 60/40 Tin/Lead.

REACH: CircuitMedic Circuit Frames contain less than 0.1% by weight any substance listed as a very high concern in Article 59 of REACH.



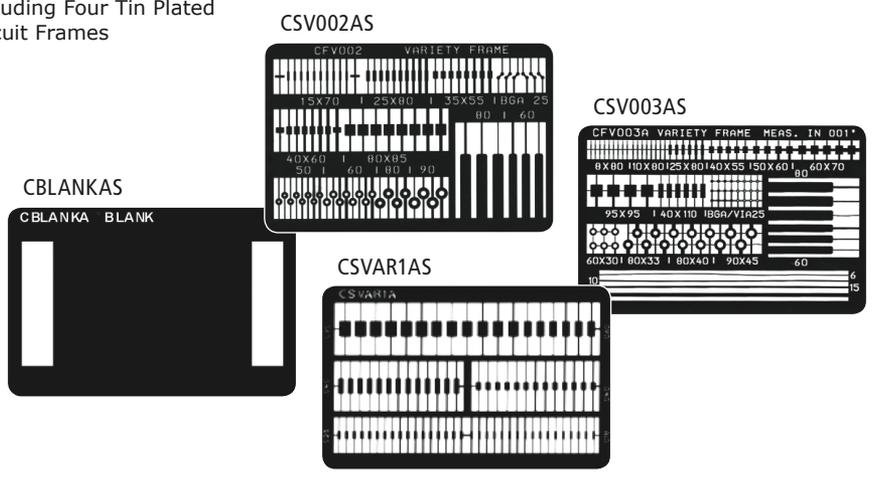


1. Remove the damaged pads and prepare the area.
2. Select a replacement pad and trim it out from the Circuit Frame.
3. Place the pad in position using tape and bond in place.
4. Complete the connection to the existing circuit.

CIRCUIT FRAME BUNDLE

P/N CBN DL-01AS

Including Four Tin Plated Circuit Frames



Circuit Track Kit

P/N 201-3130

P/N 201-3132 Refill Kit

APPLICATIONS

- Circuit Track Repair

FEATURES

- Everything you need to repair damaged circuits and conductors.
- Circuit Tracks can form to any conductor pattern.
- Designed to meet IPC recommended guidelines.
- 19 separate items, more than 50 pieces.



Kit is shipped in a rugged, conductive plastic case safe for ESD sensitive areas.

DESCRIPTION

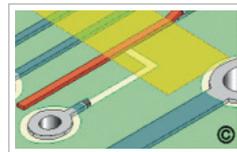
It's now easier than ever to repair damaged circuits. Circuit Tracks are rectangular shaped conductors made of 99.9% pure CDA 11000 copper.

These rectangular ribbons closely conform to the original conductor dimensions. The replacement Circuit Track is bonded in place using prepackaged epoxy included in the kit. This kit is a great time and labor-saver and an easy solution to repairing missing or damaged circuits.

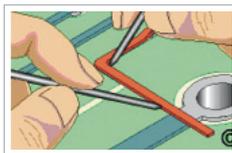
1. Remove damaged conductor.



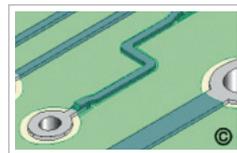
2. Solder one end.



3. Form the shape.



4. Overcoat with epoxy.



Gold Contact Plating Kit

P/N 201-6100 120 VAC

P/N 201-6102 230 VAC



FEATURES

- Specifically designed and packaged for gold edge contact plating.
- Plating probes use pre-wrapped plating anodes.
- Industry approved and conforms to IPC guidelines.
- Variable power supply provides accurate voltage and current.



DESCRIPTION

Here's the perfect kit for replating solder-contaminated or damaged gold edge contacts or contacts that don't meet the minimum thickness specification. The kit includes a DC power supply and all the tools and materials needed for gold edge contact plating.

Plating probes use pre-wrapped, screw-on plating anodes to end the common problems associated with loosely wrapped cotton anodes.

PLATING SOLUTIONS

P/N 115-3821 Plating Solution, Gold, 1 oz (.03 liter)

P/N 115-3831 Plating Solution, Nickel, 1 oz (.03 liter)

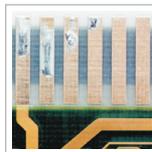
P/N 115-3824 Plating Solution, Gold, 4 oz (.12 liter)

P/N 115-3834 Plating Solution, Nickel, 4 oz (.12 liter)

P/N 115-3844 Plating Solution, Electroclean, 4 oz. (.12 liter)

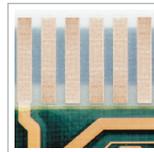


BEFORE



Gold contacts contaminated with solder.

AFTER



Gold contacts replated using the Gold Contact Plating Kit and Optional Plating Solutions.

Plated Hole Repair Kit

P/N 201-3140

P/N 201-3142 Refill Kit

APPLICATIONS

- Plated Hole Repair

FEATURES

- Eyelets meet IPC Guidelines.
- Versatile - has everything you need to repair plated holes in a wide variety of sizes.
- Standard eyelets are RoHS compliant.



Kit is shipped in a rugged, conductive plastic case safe for ESD sensitive areas.

DESCRIPTION

This kit includes all the tools and materials you need to repair damaged plated through holes in circuit boards.

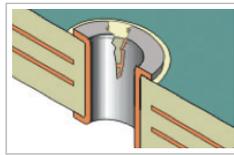
The kit includes a variety of eyelet, carbide ball mills for drilling, and setting tools to form the eyelets conforming to IPC guidelines.

Eyelets are made of pure copper or brass electroplated with tin.

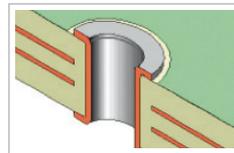


Eyelets - Eyelets are brass or copper, electroplated with tin, unless otherwise specified.

BEFORE



AFTER



Eyelets and conductors for plated hole and circuitry repair.

Six different eyelet sizes are included with this kit. Additional eyelet sizes are available for purchase at www.circuitmedic.com

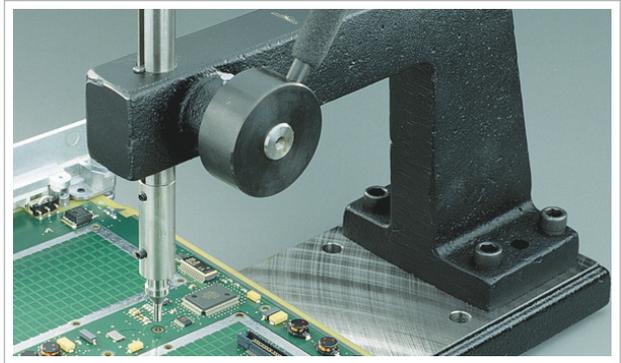
Eyelet Press

P/N 110-5202



FEATURES

- Heavy duty construction to properly form eyelets per IPC guidelines.
- Wide variety of setting tools available.
- Eyelet tooling made from hardened steel with .375" diameter shanks.



This rugged, heavy duty press precisely forms eyelets in circuit boards for repair or assembly.

DESCRIPTION

This rugged, heavy duty press precisely forms eyelets in circuit boards for repair or assembly. The unit has a 6.50" (16.50 cm) throat depth to accommodate 12" wide circuit boards. A wide variety of setting tools and eyelets are available to meet most circuit board plated hole repair and rework needs.

The CircuitMedic Eyelet Press will deliver years of maintenance-free reliable production.

SPECIFICATIONS

Throat Depth: 6.50" (16.50 cm).

Minimum Throat Opening: 1.00" (2.54 cm).

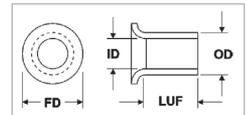
Tooling Shank Size: .375" (9.52 mm Diameter).

Weight: 28 lbs. (13 kg.).

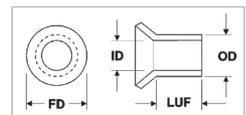
TABLE OF EYELETS

Part No.	Type	Metal	ID	OD	LUF	FD
115-7206-25	Eyelet, Flat Range	Copper	.020" .508 mm	.030" .762 mm	.094" 2.388 mm	.046" 1.168 mm
115-7209-25	Eyelet, Flat Range	Copper	.020" .508 mm	.030" .762 mm	.120" 3.048 mm	.046" 1.168 mm
115-7306-25	Eyelet, Flat Range	Brass	.030" .762 mm	.040" 1.016 mm	.093" 2.362 mm	.060" 1.524 mm
115-7336-25	Eyelet, Flat Range	Brass	.033" .838 mm	.047" 1.194 mm	.093" 2.362 mm	.080" 2.032 mm
115-7339-25	Eyelet, Flat Range	Copper	.033" .838 mm	.047" 1.194 mm	.125" 3.175 mm	.080" 2.032 mm
115-7353-25	Eyelet, Flat Range	Copper	.033" .889 mm	.047" 1.194 mm	.062" 1.575 mm	.080" 2.032 mm
115-7366-25	Eyelet, Flat Range	Copper	.033" .914 mm	.046" 1.168 mm	.093" 2.362 mm	.076" 1.930 mm
115-7453-25	Eyelet, Flat Range	Copper	.045" 1.143 mm	.059" 1.499 mm	.062" 1.575 mm	.090" 2.286 mm
115-7456-25	Eyelet, Flat Range	Copper	.045" 1.143 mm	.059" 1.499 mm	.090" 2.286 mm	.090" 2.286 mm
115-7459-25	Eyelet, Flat Range	Copper	.045" 1.143 mm	.059" 1.499 mm	.125" 3.175 mm	.090" 2.286 mm
115-7576-25	Eyelet, Flat Range	Copper	.057" 1.448 mm	.067" 1.702 mm	.095" 2.413 mm	.111" 2.819 mm
115-7676-25	Eyelet, Flat Range	Copper	.067" 1.702 mm	.078" 1.981 mm	.097" 2.464 mm	.130" 3.302 mm
115-8359-25	Eyelet, Flat Range	Copper	.035" .889 mm	.047" 1.194 mm	.118" 2.998 mm	.080" 2.032 mm
115-8431-25	Eyelet, Flat Range	Brass	.043" 1.09 mm	.059" 1.499 mm	.156" 3.962 mm	.095" 2.413 mm
115-8559-25	Eyelet, Flat Range	Copper	.055" 1.397 mm	.060" 1.753 mm	.126" 3.200 mm	.095" 2.413 mm
115-8736-25	Eyelet, Flat Range	Brass	.073" 1.854 mm	.089" 2.261 mm	.093" 2.362 mm	.125" 3.175 mm

Flat Flange Eyelet



Funnel Flange Eyelet



Base Board Repair Kit

P/N 201-3110

APPLICATIONS

- Base Board Repair

FEATURES

- Versatile, includes everything you need for base board repair.
- Meets IPC guidelines
- High strength, high temperature epoxy withstands demanding physical environments.
- Color agents permit matching of solder mask and base board colors



Kit is shipped in a rugged, conductive plastic case safe for ESD sensitive areas.

DESCRIPTION

Most types of damage to base board material can be repaired with this versatile repair kit. The kit includes epoxies, color agents, and alcohol swabs.

COLOR AGENTS

Matching epoxy to the color of the circuit board being repaired is a simple process when you use a color agent.



115-9102

115-9185

115-9293

115-9348

115-9358

115-9376

115-9424

115-9457

115-9560

115-9561

115-9995

115-9996

Circuit Bond Kit

P/N 115-1322



FEATURES

- Two-compartment packaging eliminates mixing errors.
- High strength/high temperature epoxy withstands demanding physical environments.
- Epoxy is clear, can be tinted with coloring agents.
- Includes Foam Swabs and Alcohol Swabs for preparation and cleaning.
- Includes Micro Probes, ideal for dispensing a tiny volume of epoxy.



Kit contains 10 packages of clear, low viscosity, superior strength epoxy ideal for circuit board use.

DESCRIPTION

The Epoxy Kit kit contains 10 packages of clear, low viscosity, superior strength epoxy, precisely measured out into two-compartment plastic packages. This epoxy is easy to use and there's no measuring.

Once cured, this epoxy makes an effective electrical insulator with good high temperature, mechanical and impact resistance properties. The epoxy can be used to bond replacement conductors, repair burns and circuit board surface defects, and many other high strength, high temperature applications.

You can tint the epoxy using Color Agents. Color agents are designed to mix with the epoxy to match solder mask colors commonly found on circuit boards.

EPOXY SPECIFICATIONS

Packaging: 2 gram pre-measured packages.

Mix ratio: 4 parts resin to 1 part hardener.

Color: Clear, transparent.

Pot Life: 30 minutes.

Cure cycle: 24 hours at room temperature or 4 hours @ 149°F (65°C).

Viscosity (after mixing): 2000 cps.

Operating temperature range: -67°F to 275°F (-55°C to 135°C).

Hardness: 88 Shore D

Dielectric strength: 4400 volts/mil.

Shelf Life: 6 months minimum.

Micro-Drill System

P/N 110-4105

FEATURES

- High quality construction for delicate work.
- Flexible telephone-style cord eliminates bothersome drive cables.
- Quick change chuck for easy bit replacement.
- Versatile forward, reverse, and variable speeds.
- Lightweight, ergonomically designed hand piece reduces fatigue.



The Micro-Drill System is a repair technician's dream.

DESCRIPTION

The Micro-Drill is a workhorse in a kit. This versatile powerhouse is ideal for milling, drilling, grinding, cutting and sanding circuit boards. It removes coating, cuts circuits, cuts leads, drills holes, cuts slots, shapes FR4 and performs many other procedures using various interchangeable bits.

Unlike most hand-held tools, the Micro-Drill has a tiny, high speed DC motor in the hand piece, eliminating bothersome drive cables and giving the technician better control. A separate power supply keeps the hand piece lightweight and reduces fatigue. Power is supplied by a panel switch or foot switch for ease of use.

Accessory Kit

P/N 110-4302

DESCRIPTION

Includes a selection of tools and bits for use with the Micro-Drill System. Includes Screw Mandrel, Threaded Mandrel, Abrading Tips, Cutoff Disks and Ball Mill Pack.



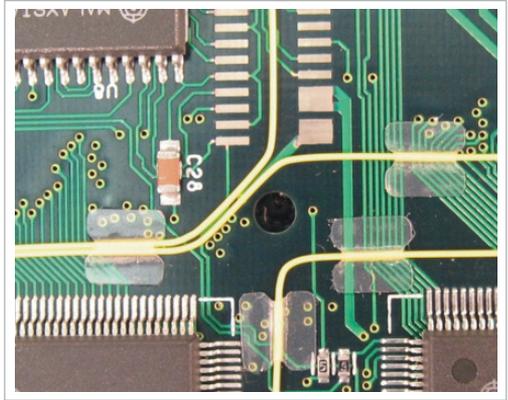
Wire Dots

See list of part numbers below.



FEATURES

- Very good initial bond strength that increases over 72 hours to stabilize as a high strength reliable bond.
- Will hold securely after exposure to numerous chemicals including cleaning solutions/sprays, saponifiers, mild acids and alkalis.
- Wires will hold securely through a typical PCB hot water wash.
- Can be repositioned during and immediately after initial bonding without causing adhesive transfer or loss of bond strength.
- Retains its performance and properties for one year from date of purchase when stored at room temperature.



Wire Dots make the job of bonding jumper wires neat and fast.

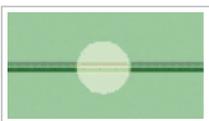
DESCRIPTION

Wire Dots are a wire tacking system consisting of pre-cut shapes of a thin, flexible polymer film membrane coated on one side with a high performance, electronics grade permanent pressure sensitive adhesive.

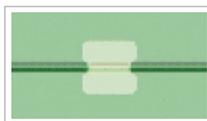
The result is a highly conformable, high strength bond. The adhesive release liner is an environmentally stable poly-coated kraft liner.

Firm application pressure develops better adhesive contact and thus improves bond strength. Avoid placing Wire Dots or any other wire tacking material directly over exposed copper or plated surfaces.

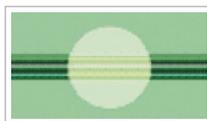
Wire Dots will perform best when applied at temperatures between 60F (15C) and 100F (38C). Do not apply below 50F (10C).



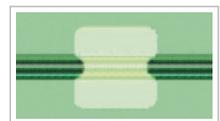
P/N 310-0651 Wire Dots,
.256" (6.5 mm) Round



P/N 310-0652 Wire Dots,
.256" (6.5 mm) Square



P/N 310-1001 Wire Dots,
.394" (10.0 mm) Round



P/N 310-1002 Wire Dots,
.394" (10.0 mm) Square

Flextac™ BGA Rework Stencils

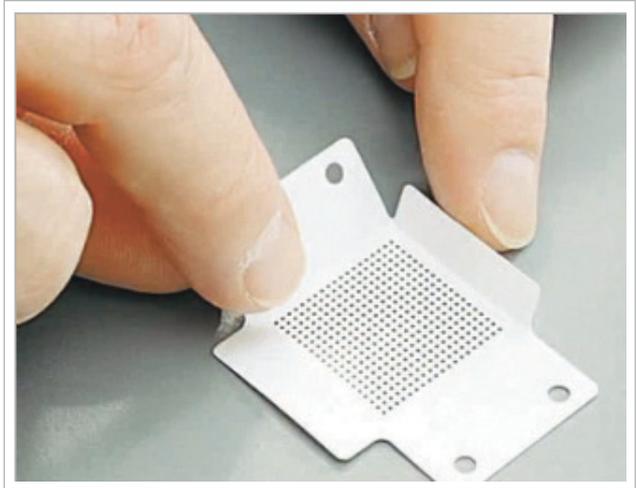
For a complete list of stencil visit:
www.circuitmedic.com/products/stencils.html

APPLICATIONS

- Applying solder paste for BGA rework

FEATURES

- Residue-free adhesive backing seals around BGA pads to prevent solder paste bleed.
- Laser cut ensures precise aperture size.
- Disposable - eliminates tedious stencil cleaning.
- Flexible - conforms to board surface.
- Fold-up sides for easy placement and solder paste containment.
- Low cost.



BGA rework solder paste stencils with adhesive backing. No tape or fixturing is needed.

DESCRIPTION

If you've been using metal stencils for BGA rework, we have some great news for you. Flextac BGA Rework Stencils... a creative new product that is a major improvement over what you may be using now.

These flexible solder paste stencils are laser cut from high quality, anti-static polymer film with a residue-free adhesive backing. Because they are self-sticking, no tape or fixturing is needed. The adhesive seals around each BGA pad to prevent solder paste from bleeding under the stencil when the paste is applied. Flextac Stencils are easy to use and leave no residue on the board surface.

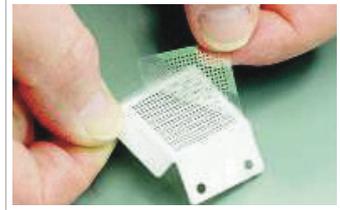
Typical BGA rework stencils are made from metal and require fixturing or taping to position them and hold them in place. Metal stencils warp easily, and if the circuit board has undulations in the board surface, the metal stencil will not sit flat. Since there is no gasket-like seal, solder paste can easily bleed under metal stencils when paste is applied with a squeegee. Also solder paste can spill out over the sides of flat metal stencils contaminating the circuit board surface. Metal stencils require tedious stencil cleaning. To use metal stencils effectively, a high level of operator skill is required.



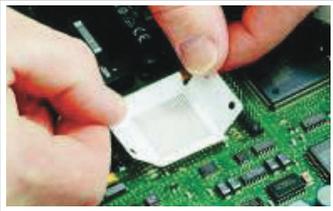
Step 1. Select the proper size and fold up the side tabs.



Step 2. Peel off the cover film exposing the adhesive backing.



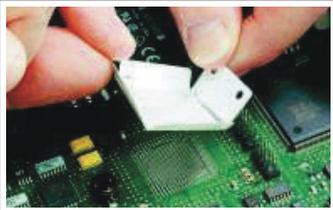
Step 3. Place in position using the handy side tabs.



Step 4. Apply paste using a standard metal squeegee.



Step 5. Remove the stencil and save for another reuse or dispose



Heat Shield Kit

P/N 201-3160

FEATURES

- Aluminized heat shield insulates the circuit board surface and components from extreme heat.
- Aluminum plates deflect excess heat.
- Quick cure high temperature mask seals seams to block extraneous heat flow.
- Includes high temperature tape, tools and materials.



Heat Shield Kit

DESCRIPTION

This kit includes all the tools and materials you need to protect heat sensitive areas of an assembled circuit board from excessive heat exposure during rework operations. This kit is ideal for the protection of adjacent components at risk of collateral heat damage during hot gas BGA rework.

During component rework, protection of nearby components is often mandatory to avoid collateral heat damage or inadvertent reflow.

Collateral heat damage or unintended reflow of adjacent component solder connections can result in component damage, oxidation, de-wetting, pad damage, wicking, starved joints and scorching. These issues can create new unintended rework problems. The rework technician must be constantly aware of the effect of heat on the target device or circuit, plus how it affects components near the target device on both sides of the assembly.

Measuring Microscope Pen, 25X

P/N 115-3115

DESCRIPTION

A powerful pocket pen sized microscope with measuring reticle for precision measurements. Ideal for inspecting and measuring conductor and pad widths, plated hole diameters, and other features on circuit boards. Field of view 3.3 mm. Scale division .05mm.



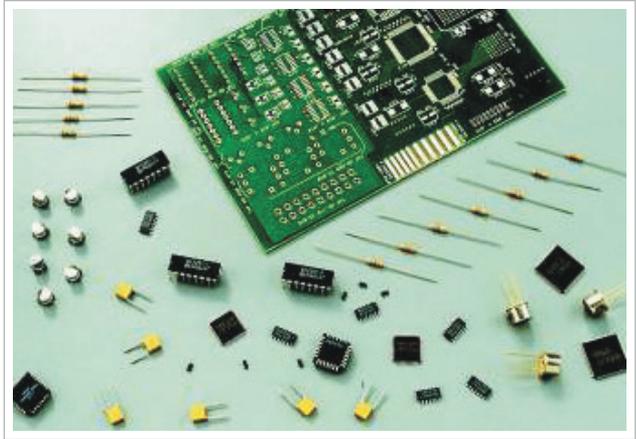
Soldering Skills Practice Kit

P/N 201-4150



FEATURES

- Includes a multi-layer PCB for realistic soldering conditions.
- Includes 15 component types required for IPC soldering skills certification.
- The perfect kit to use when obtaining IPC soldering skills certification.



Soldering Skills Practice Kit

DESCRIPTION

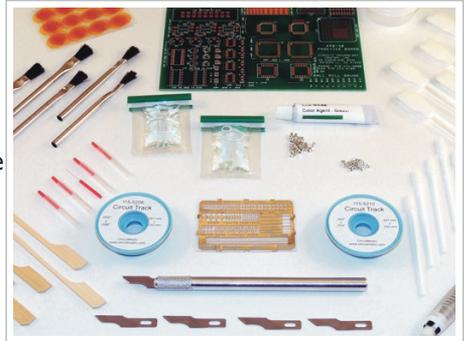
Are your new soldering and rework operators skilled enough to work on your valuable products? The best way to find out is to order our Soldering Skills Practice Kit that lets them work on actual projects until they develop the expertise they need.

Repair Skills Practice Kit

P/N 201-4350

DESCRIPTION

The Repair Skills Practice Kit will help operators brush up on their circuit board repair skills, and give them an advantage toward becoming IPC certified. Includes a circuit board with a variety of plated holes, surface mount pads, replacement circuit tracks, eyelets, epoxies and more.



FEATURES

- The Repair Skills Practice Kit will help operators brush up on their circuit board repair skills.
- Includes dry film, epoxy-backed replacement circuits that do not use messy liquid epoxy.
- Includes Circuit Tracks to repair damaged circuits.
- Includes epoxy and color agents for solder mask or base board repair.
- Includes eyelets for plated through hole repair.
- Tools and materials conform to IPC guidelines.

CIRCUITMEDIC

First-Aid Kits for Circuit Boards®



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